

Form and function Analysis of Porch in Iranian- Islamic Architecture

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Abstract

Basically, relationship of the interior and exterior spaces of architecture, also, the relationship is always an indication of the architecture type. Corbusier believed that all historical background of the architecture just focus on osmium of the wall. Size of the opened space is an indication of its correlation with the adjacent environment; namely, entrance is a combination of differently structured spaces rather than just an opening and “Porch” is one of the mentioned elements of the Iranian architecture. It is multifunctional; the porch separates the entrance from the corridor and the courtyard; it is an independent space including stone benches for seating and social interactions. This paper is defining the porch, to know why and how the independent element is developed in Iranian residential architecture. The porch is analyzed for its function and form; some concepts are discussed in the process of porch development including: privacy, climate, joint and so forth.

Key Words: Iranian architecture, entrance, porch, Corridor

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Introduction

Form, and function of a structure as well as behaviors of the Iranian people are needed to be analyzed in architecture. The mentioned elements are reciprocating. Omission of an element turns another element to be ineffective. Mainly behaviors of different nations influence on the architecture, every nation has its specific behaviors with different features that are different from those of the other nations. So, the structure is linked differently in the Iranian –Islamic architecture. Iranians’ spirits and behaviors are privacy and interior oriented rather than exterior oriented in architecture (Navaei & Haji Kasemi, 2011). “Entrance” has linked internal space to the external space, so, the concerning elements must be specifically focused. “Porch” is the most important entrance junction, separator and disciplinarian. The paper is trying to illustrate that why and how the porch was developed in Iranian architecture due to the Islamic behaviors of the Iranian nation.

Research methodology

This paper was developed based on library studies through descriptive methods. Firstly, concepts of the porch were developed to indicate that how it functions such as an entrance junction, the case study and concerning challenges are more clarified.

Problem definition

Iranian architecture is behavior oriented, the spaces are formed based on the Iranians’ behaviors. Every space has its specific structure and omission of an element ruins and demolishes other correlated ones, for instance, lack of porch in Iranian-Islamic architecture demolishes and ruins authorized national behaviors in contemporary structure. Unfortunately, porch is omitted in Iranian modern architecture due to the influence of the contemporary abusive western architecture without considering Islamic behaviors of the Iranian nations. This paper is to define and introduce advantages of porch to resolve the issue of porch omission, to know how the ancient architecture and the contemporary architecture are effective-

ly conformed.

Theoretical bases:

Art and architecture have a long history, and they have been closely linked to people’s life. Architecture is the most prominent aspect of every nation and every culture along the history; it is showing how man has developed architecture in concerning environment. Construction development has satisfied desirable living conditions as well as psychological requirements of human being. (Mohammadi & Rajabi ,2010) building means creation , definition and limitation of a piece of land for a specific purpose. A building has both interior and exterior spaces. Limited space indicates that how someone or a group of people may control the events and happenings within the building. Interior and exterior spaces are reviewed in two aspects; namely, separation, transfer, disruption and connection have limitations; threshold and passage are the controlling spaces respectively; meanwhile, there are natural spaces to view and control people. In fact, the threshold defines the nature of limited area. Door and window illustrate that there is a thick wall. Moreover, the thresholds both indicate nature of the spaces, facilitated accessibility and how they are embodied. The threshold is a place to overturn the universe. Accordingly, to know how entrances of Iranian houses and porches were developed, (The Iranian hose) is firstly discussed.

House is a shelter for human being, it has always satisfied their spiritual and psychological needs, and they view on it as a dream house.

G. Bachelard wrote: home has been the first cradle of human being but the universe the second one (Bachelard, 1964) home is a direct place to know the surrounding world; you do not need to search because you may see the world in your home. Namely, house is for everyday life; we continually live within the house, and it is a dependable supporter. (Shultz, 2002).

Domicile is a Greek word, it is rooted in very ancient times ; also large roman houses had a central

courtyard with columned porches.(Shultz Norbert ,2001) room was a shelter not so advanced as the contemporary ones named Sara , Goostak, Setakh, or Vesak; south Iran defined Sara as a home containing a room or some rooms(Pirnia, 2008) natural climate of Iran , traditions, religious ceremonies, spirit , ethics, thoughts and beliefs of the Iranian people is clearly illustrated in the Iranian architecture. They are shown both in the great monuments and the small ones. Entrance has been an important and effective element to demonstrate coordinated thoughts and viewpoints and objectives of concerning period. (Dousti, Mokaddam, 1388)

Entrance (threshold):

The traditional houses had almost a unique structure including: the vault, the platform, the threshold, and a door with Kobe, clone, doornail portal hole; porch and corridor included too.(depth of the entrances were about 5 m deep; they were 3-4m wide and 3-4 or 5m high respectively(Sultan Zadeh ,1992) the mentioned parts facilitated audio video interactions, stop, wait and entrance as well; also, incoming people were leaded to the houses depending their gender, presence quality(day or night, sleep or wakefulness, rest or at work, lonely or in group, winter or summer, beside the natural scenes or far from a natural landscape; also it was depending on family relations in all individual, common, and social aspect, either for short-term or long-term hospitality.(Hashemi,1996)

Transposition principle:

The spaces and things are transposed orderly based on various daily reflections. We need to be leaded through complex spaces. They have not unique values to maintain them orderly.(Aivazian, 2011) variety makes the hierarchy unique, powerful and uniform. Hierarchy facilitates it for us to mix and combine larger things with the smaller ones or simpler things with the complex ones for easier and more differentiable. An architect is decisive to identify geometrical figures both implicitly and explicitly. (Aivazian, 2011) entrance to the porch, corridor, courtyard, al-

cove and hall are orderly accessible from the main space of a house. Therefore, Islamic architecture has a systematic order undoubtedly without conceptual analysis.(Haider, 1988) in fact, the buildings are dimensional combinations of differently jointed parts. They have compound structures, projection procedure may be less effective for us to know more the aesthetic features. (Aivazian , 2011)

In fact, before entering to a building we have to walk some distance to approach the entrance that is the first step of traffic, namely circulation (Di Kei Cheng, 230, 2006) entrance is a space constructed systematically. Porch is the first independent element linked to the entrance (yashmi, 691,692, 1999) majority of the houses had a porch and a corridor in the past; there were some different branches in a house. It was built octagonal, semi-octagonal, hexagonal or tetrahedral and square (Pirnia, 160, 1372) but its size was depending on the budget of owner. Roof of the porch was decorated very well. (Shojae Razavi ,2005) it was an area assigned for; some stone benches were built surrounding to it.

(Kabirian & Moradi, 2002) generally, it functions as follows:

- As a junction it links the exterior space to the interior, it is linked to corridor too.
- Light and its attraction has been controlled: porch space is a semi-dark area; its darker space compared with that of the outside has by itself created double privacy.
- Movement control and the dividend space (Yashmi,19999) Porch is a space for movement control of human being, also, it is a junction to approach different spaces; it is developed to fracture view angle; to create appropriate turns; to create various levels ; to cover and coat; to decorate; to build arches, skylight spaces and floors. Porch is a junction and a cognizable filtering area. (Moradi, Kabirian,2002)

Porch as a junction:

“Junction or joint” where two parts or skeletons are jointed together (Dehkhoda, 1998), (Moein, 1999) “Separated parts” Articulation: it is referring to the two joints connected together or joint connection. Different independent parts of a structure are linked through articulation. It fortifies different parts of a building. Curtailments form rhythmic supports with different forms and sizes; all of them must be very punctually considered as well. Intersection of some elements is developed with the empty space; evidently, such a simple intersection is not deemed to be an articulation. We must necessarily identify the limited junctions and articulations by simultaneous utilization of architecture tools, materials, applications and conceptions.

Articulation is different in architecture to sculpturing; some different elements and methods are used based on reflection and contemplation rather than whim. Articulation facilitates function to link or joint different parts of a structure. Accordingly, the structure becomes more evident and more natural. (Aivazian, 2011)

It was mentioned that a space needs some forms, functions and behaviors to be analyzed. Skeletal and

functional elements of a porch must be reviewed through junctions.

Junction is somewhere the two joints are attached and detached. They are classified in two groups:

Skeletal junctions:

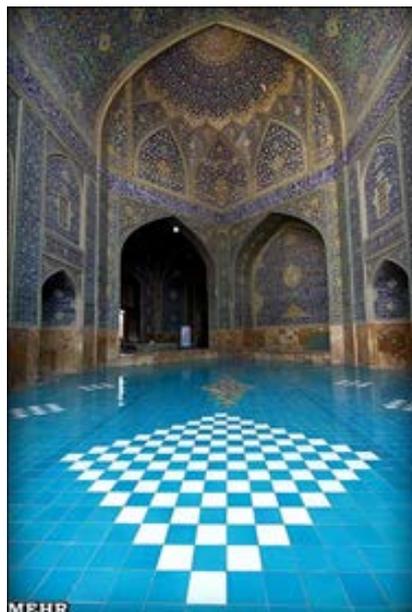
The mentioned junctions separate the space into three different domains:

1-Transposition space: it is helpful to transform a position to another one.

2-Route space: the space is unlike passage space that is a space for collection, distribution and spacing.

3-Space region: location is the most elemental place, where man’s experience is demonstrated to be meaningful. Spiritual, and natural strengths of human being are conformable. Experienced nature friendly man knows more the environment. Qualifications are focused more rather than scientific data.

Also, he or she is coordinated to live with light ; in fact his personal and mental moods are influenced by light and climate. Finally, day, night, seasons and historical backgrounds are influential. Man knows the nature and he is dependent on it from a very long time (Shultz, 235, 236,2009)



According to the definition of space, skeletal joint is divided into transposition, route, and place as well. "Porch" functions well in traffic, it is both transport and route space. It is sometimes a junction for place. Location: is part of space with peculiar nature (Grouter, 2004) namely, space is the identified place with some junctions and linkages to the environment although it is independent. Limiting the junction, makes the porch a linkage of place. For instance Imam Mosque in Isfahan contains a porch, a framework to the courtyard that links interior part of the mosque to the very porch to conform a suitable place.

Residential buildings contain a porch with stone tables for seating and lighting candles to create a sense of serene place.

Porch is a route joint that is functioning as a collecting and distribution element including forecourt to the corridor and courtyard that is a miracle in view of multi-purpose space creation in Iranian architecture.

Activation joints:

generally, they are as follows:

Classification junctions for privacy; audio video control, support and maintenance, safety and health.

Privacy classifications: our culture and literature respects exterior or outside locations; some limitations are defined. (Falamaki, 2005) public environments and large areas of cities must remain calm and without noise, so, some privacy features are defined as follows:

- Farther areas of city are in fact locations for daily traffic control. (Falamaki, 2005)

- Public places of the urban domains, where the citizens have their individual rights to enter inns, Timcheh; even some bazaar and Caesarea, that are open for every customer but for a limited time in particular internal spaces. Thus, never the citizens are eager to pass their free times or leisure times in such places. (Falamaki, 2005)

- Districts and dissimilar shopping centers that induce and support some other social relations for concerning citizens. (Falamaki, 2005)

- Deadlocks and secondary passages where there is low traffic jam in some residential urban areas in Shiraz, Yazd, and Semnan In Iran (Falamaki, 2005)

- Ghettos –where European merchants performed their businesses; they enclosed with walls and courtyards developed based on the European urban development techniques. (Falamaki, 2005)

- Some countries do not welcome or hospitalize all other citizens to deliver business services –such behaviors are apparently observed in mosques and public bath houses of Iran.

Old city structures are populated, and introverted; also they have developed a private life for some families; they were constructed based on privacy principle by focusing on religion; main objective of the development was to create privacy for family members; accordingly the porch was a preventive measure to create for all of the family members and strangers; entrances have different junctions to the complex construction; perhaps they are constructed based on and by relying on the Islamic conducts. According to holy Quran Muslims are not permitted to enter into a room unless they get permission from the resident while they never are asked getting permission while entering into public places; so, entrance permission is preventing them from passers unlawful looking; women should veil themselves against the passerby and all men and women should observe privacy principles according to holy verses of Quran. (Navaei & Haji Kasemi, 2011)

Majority of houses in city were constructed mononuclear unless the houses of well to do and the nobles. Namely, almost there were two separate residential units linked together. Entrance space of the houses were developed based on religious and social objectives to regard privacy when they are entering to a house. Threshold or porch prevented direct view to the inside of the introverted house had indirect circle in a corner of the courtyard. Thus, entrance design of a house is to control and extend the route of exit to entrance.

Internal and external parts of many houses are usually branched through a porch. The porch is directly

joined the threshold to branch the entrance route into two different ways led to the inside of building. Porches with one branch have allotted a space for waiting; as well as direction change. (Sultan Zadeh, 1993)

Public buildings and residential houses are built differently at the entrance based on Islamic conducts. Muslims are not permitted entering a house unless the resident or owner gives permission according to holy Quran. Meanwhile they may freely enter public places where all people use. (Navaei & Haji Kassemi, 2011).

Controlling junctions of audio video, security, safety and health:

People are always trying to create a suitable place for privacy; different definitions of privacy have a common feature. Main objective is to know how it is possible audio video and smell. Rappaport has defined privacy as “control capability of social interactions so that it is done through a desirable controlling process”. (Lang, 2012) that is fully observable in view of entrance and the porch. Designed porch includes an entrance space for privacy control and direct view to

the private space. But national norms and values motivated the owner to respect the guests, so the porches have stone tables to light candles for those who may enter into the house through the porch. In fact darker area prepares the entering people to be curious. Also, the classified roof is so decorated that incoming views the decorations step by step, heightened environment creates a sense of dignity rather than humility in view of religion; so, he or she has a chance to decide. (Bemanian et al., 2010)

Porch is an active junction responsive to all above mentioned cases that is a miracle of the Iranian architecture, where the middle spaces are developed to satisfy several main requirements.

Otherwise, the spaces can be classified in view of function and the space for transition such as bedroom and the corridor; the porch is linked to both of them and installation of several stone benches facilitate seating, also it is a transition space that links the threshold, façade and the corridor. Climate is an effective element for entrance development. Man and nature are dependent to climate – and human life is dependent to the climate too. However, climate motivates man to be prepared in his life because he or she is a part of nature; he can dominate the nature rather than getting seclusion. So, he must know codes of nature; form and content awareness reflect the very

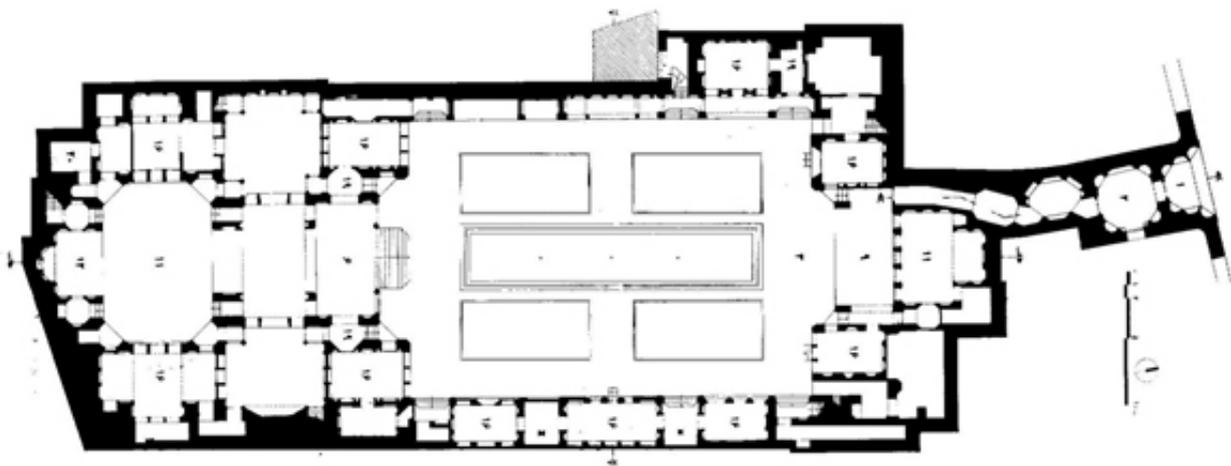


Fig.3 – The first floor plan of Borojerdies' house

nature. (Shultz, 2009)

Climate is a chance and strength point in Iranian architecture, climate is utilized to reduce limitations for creating opportunities in the best way. Analyzed residential houses in different climate conditions we conclude that porch and entrance are effective elements for control of the climate. Urban areas with warm and dry climate are enclosed and it is conditions.(Qobadian, 2008) The porch is always independent; it links other parts along all entrance route; it is a disciplinary element to changed Non-disciplinary spaces, it is produced octagonal, semi-octagonal, in setting form , and Kashlouli. (Pirnia, 2008)

But in northern part of Iran, it is warm and dumpy ; the element is constructed by a simple technique

for high level humidity. The architect always tries to control the dump air inside the building. He or she tries to prevent entering of heavily moisturized air into the building because climate conditions and wind flow to the building must be controlled by implementing the best techniques.(Akhtar Karvan, 2011) thus, build houses by Master have jointed the porch and corridor to create an appropriate rectangular shape (Kalbadi's house in sari) porch has been maintained as an independent structure to omit the corridor and reduce the length of entrance route (Manouchehri's house, Amol). Also, the developed houses of Tabatabaei Family as well as other houses constructed in hot and dry climate.

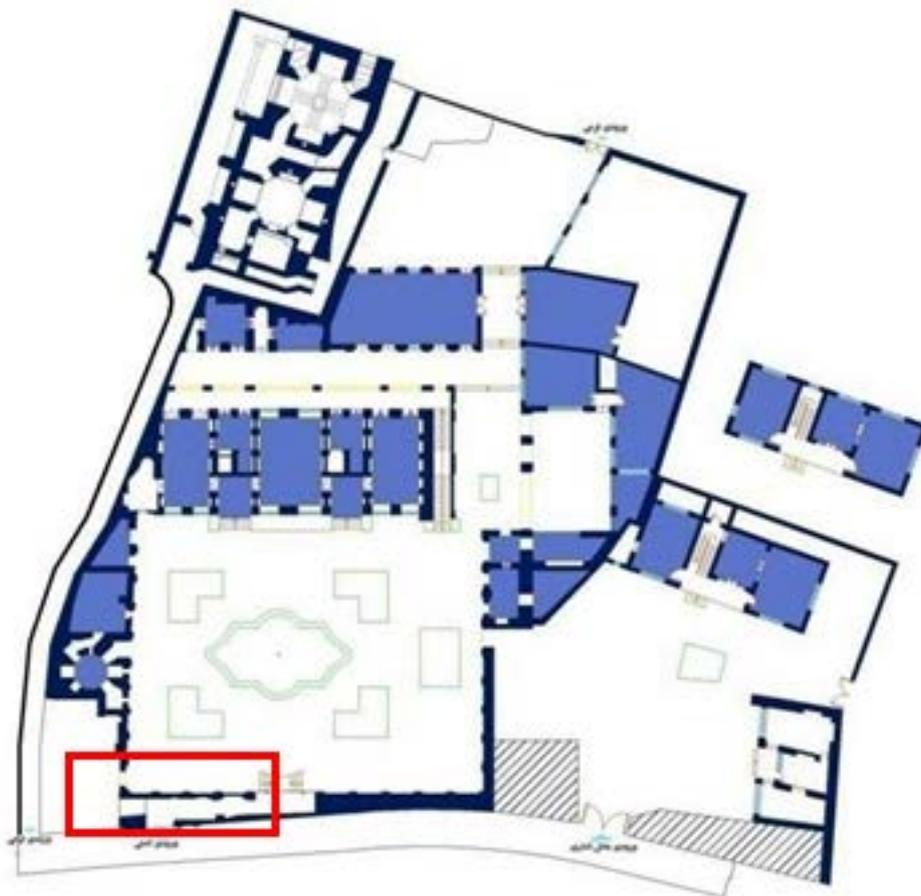


Fig.4: The first floor plan of Calbadi's house

Conclusion and discussion:

According to the obtained results of the research, also, viewpoints of Navaei and haji Kasemi in 2011 in a book named *Brick and Imagination* explanation of the Islamic architecture (p25); it is mentioning that the porch was developed by the Iranian architects to separate interior space of the building from the exterior environment ; both the interior space and the exterior are elemental; interior and exterior areas are branched but they are so defined to link the corridor to the building; the porch is constructed in different octagonal, semi-octagonal, setting, and Kashkouli ; also, Sultan zadeh ,p75, (1993) in a book named *the interior spaces of the traditional architecture* has observed that the porch is directly linked to the threshold to divide the entrance route into two different branches to maintain the variety and to link them to each other; Professor Pir Nia, (2010,p160) in a book compiled by Gholamhusein Memarian, named *The Iranian Architecture*; observed that the porch is an interface for interior and exterior parts of a building ; it is constructed in different octagonal , semi-octagonal, setting, and Kashkouli forms; Sultan Zadeh (p75, 1993) in a book named *Entrance spaces of the Iranian traditional architecture*, observed that, the porch is directly linked to the threshold to branch the routes in two or more.

In a book written by Moradi and Amirkabirian; (p,116, 2002) analyzed some buildings constructed based on the traditional Iranian architecture and observed that the porch is a branched space filtered and jointed to other parts of the construction to facilitate human movement when they are leading towards or outwards of the construction, The porch is a special space to create different view angles, for creation of various visual impacts related to the suitable turns; to develop different levels, various types of coverings and coatings;

Arches , and decorations , skylight and ersfloor development; accordingly, we may conclude that the porch is an independent identifiable structure that links and limits interior section of a building to the

exterior ; it is an essential element of the traditional Iranian architecture ; also, it should be appropriately posited so that all requirements are satisfied in today flat construction; it must be upgraded as an interface too. Omission of the ancient structures is deemed to be the negation of main Iranian-Islamic culture whereas we should maintain our social and cultural norms; therefore, there are some recommendations as follows:

1. Development of independent Applied- Scientific education centers for different fields of study in Iranian architecture both for associate degree and Master's degree of the traditional Iranian architecture; to involve experienced traditional architects in education process as well.
2. Some more specialist units must be studied to comprehend the concepts of the Iranian architecture while master's degrees, and PhD degree s are awarded to the concerning successful students of architecture,
3. To involve the qualified skillful traditional architects of previous generation for higher educations in architecture and urban development (Master's degree, and PhD)
4. Arranging tournaments of the architecture design through combining the modern architecture to the traditional architecture by different new and influential designs and approaches in this domain
5. Holding educational courses for the members of Iranian engineering system where qualified traditional architects of previous generation take part to introduce the concepts of Iranian architecture to the young engineers.

References:

- 1-Akhtar Kavan, M. , sadik , M. & Akhtar kavan , H.(2011) *Harmonic conditions to Iranian climate (Climate, Energy and Architecture)*, Tehran publications : kalhor, Tehran.
- 2-Bemanian, M.R., Gholami , R. , Rahmat Panah & Janat.(2010), *identifying elements of the traditional Iranian houses , case study- Rasoulia's house in yazd*; two quarterly scientific and research on studies of Islamic art, No,13,pp55-68.
- 3-Dehkhoda, A.(1998), *Dictionary Motamed noval* , publications of Tehran university, Tehran.

- 4-Di Ki Ching, F.(2006), Architecture: form, space, and discipline, Translated by Taghaboni, Alireza, & Kavidel Sedikeh, Arad publications, Tehran
- 5-Ein, B., Allen, A., Pal, M., Mac Glin, S., Smith & Graham.(2011). Responsive environments, translated by: Dr. Mostafa behzadfar, publications of University of science and technology, Tehran.
- 6-Falamaki, M., (2005), privacy limits of the Iranian cultural wealth, faza publications, Tehran
- 7-Foon Mais, P.,(2011), a glance to the bases of architecture, (form –Place), Translated by Aivazian, Simon, publications of Tehran University, Tehran.
- 8-Grouter, Y. K., (2004), Aesthetics of archialogy, Translated by pakzad, Jahanbakhsh, and Homayun, Abdolreza, publications of Shahid Beheshti University, Tehran
- 9-Haider, S.G.(1988), Islam, Cosmology and Architecture, In The Architecture of Islamic Societies, Margaret, Bentley sevchenko(ed), massa chusette: Aga Khan program for Islamic architecture, cambridge pp(73-85)
- 10-Hashemi, S. R.,(1996), street architecture, Abadi publications, issue 20, pp2-10.
- 11-Jamat Ramadan, M. & Neštani, J.(2010), Tradition and modernity at the entrances of Tehranian's houses during qajar, fine art publications, issue 44, pp65-75
- 12-Lang, J.,(2012), creation of architecture theories(Main role of behavioral sciences in environmental design), translated by Eini Fard, Alireza, publications of Tehran university, 6th edition, Tehran.
- 13-Moein, M., (1999), Countryside Persian dictionary, Amir kabir Publications, Tehran
- 14-Mohammadi, R. & Rajabi, M. A.,(2010), Entrance Inscribed facades of Tehran houses from Qajar era up to now, Negareh publications, issue 15, pp19-27.
- 15-Moradi, M., Kabirian, A., Kabirian, A., Atas sa,(2012), introduction to some Iranian traditional architectures, and analysis of their space features, publications of cooperative found of cultural heritage organization, Tehran.
- 16-Motahhari, M., (1974), veil, publications of Islamic physicians, Tehran, pp109-119.
- 17-Navaei, K. and haji Kasemi, K., (2011), brick and description on imaginary Islamic architecture, Soroush publications, Tehran.
- 18-Ousti Mokaddam, p.,(2009), historical review of entrance, Arman Shahr publications, the 2nd issue, pp91-103
- 19-Pirnia, M. K. (2008), Iranian Islamic Architecture, Soroush-e-Danesh publications, Tehran.
- 20-Pirnia, M. K.(2008), Iranian Architecture, Soroush-e-Danesh publications, Tehran.
- 21-Qobadian, V,(2008), climate study of the traditional Iranian buildings, publications of Tehran university, Tehran
- 22-Shoja Razavi, s.(2005), descriptive dictionary of architecture for concerning domains to Meibod, language and dialect investigation cooperated with general cultural and cultural heritage department, Tehran.
- 23-Shojae Razavi, S.(2005), descriptive architecture dictionary and concerning domains according to Meibod dialect, publications of language and dialect investigation, cooperated with general department of cultural organization and cultural heritage, Tehran.
- 24-Shultz, K. N.,(2009), place spirit- towards architecture phenomenology, Translated by Shirazi, Mohammad Reza, Rokhdad-e- nov publications.
- 25-Shultz, K. N.,(2001), Housing, urban areas and rurals, translated by Pour Dahimi; Shahram, Rouzaneh publications, Tehran.
- 26-Shultz, K. N.,(2002), concept of residence, towards picturesque architecture, translated by Yarahmadi, Mahmoud, Agah publications, Tehran.
- 27-Sultan Zadeh Husein(1992), Entrance spaces of the houses of Old Tehran, Cultural investigation department, Tehran
- 28-Sultan Zadeh, H.,(1992) Entrance spaces of the traditional architecture houses of Old Tehran, Cultural investigation department, Tehran.
- 29-TAKVAEI, V., (2007) hidden system and structure of Iranian architecture, fine art publication, 30th issue, pp43-52.
- 30-Yashmi, J.,(1999), Article series on Mosque architecture conferences, in the past, future and present, Art publications, Tehran.